



U.S. NONPROVISIONAL PATENT APPLICATION

GASTRIC BAND INTRODUCTION DEVICE

Randal T. Byrum

And

Sean P. Conlon

Attorney Docket No. 21680/0515150
END-5085

Kevin S. Sprecher
Registration No. 42,165
FROST BROWN TODD LLC
2200 PNC Center
201 East Fifth Street
Cincinnati, Ohio 45202
(513) 651-6121

CinLibrary/1331085.1

"Express Mail" mailing label number

EV 316083607 US

September 30, 2003

Date of Deposit

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to The Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Kevin S. Sprecher

(Type or print name of person mailing paper of fee)


Signature

GASTRIC BAND INTRODUCTION DEVICE

Randal T. Byrum
Sean P. Conlon

Background of the Invention

[0001] Over the years many methods of treating morbid obesity have been undertaken. One of the more promising methods employs the placement of a circumscribing band, commonly known as a “gastric band”, around a portion of the stomach whereby the stomach may be compressed thereby creating a stoma opening that is smaller than the normal interior diameter of the stomach thereby restricting food intake into the lower digestive portion of the stomach.

[0002] Typically, the gastric band is introduced into a patient’s abdomen by pushing it through a large trocar or trocar site by hand. This method of introduction increases the risk of infection resulting from the gastric band contacting the patient’s skin. Inserting the gastric band directly through a trocar may also undesirably damage the gastric band. Consequently, a significant need exists for a surgical instrument that enables the introduction of a gastric band into a patient’s abdomen without coming in direct contact with the patient’s skin or trocar.

Brief Summary of the Invention

[0003] The present invention overcomes the above noted and other deficiencies in the prior art by providing a surgical instrument that allows for the introduction of a gastric band into a patient’s abdomen without allowing the gastric band to contact the patient’s skin or a trocar.

[0004] In accordance with one embodiment of the invention, the surgical instrument includes an elongated inner rod within an elongated support

tube. The inner rod includes a mechanism for releasably engaging a gastric band. When the inner rod is slid into the support tube, the mechanism for releasably engaging a gastric band is exposed.

[0005] In another embodiment of the invention, the surgical instrument similarly includes an elongated inner rod within an elongated support tube. The inner rod includes a releasably engaged gastric band on one end. When the inner rod is slid into the support tube, the gastric band is exposed.

[0006] The above summary of the present invention is not intended to describe each embodiment or every implementation of the present invention. Advantages and attainments, together with a more complete understanding the invention, will become apparent and appreciated by referring to the following detailed description and claims taken in conjunction with the accompanying drawings.

Brief Description of the Drawings

[0007] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention, and, together with the general description of the invention given above, and the detailed description of the embodiments given below, serve to explain the principles of the present invention.

[0008] FIG. 1 is an isometric view of an unactuated gastric band introduction device;

[0009] FIG. 2 is an isometric view of an actuated gastric band introduction device;

[0010] FIG. 3 is a partial side view of the distal end of the inner rod of gastric band introduction device;

[0011] FIG. 4 is an isometric view of an actuated gastric band introduction device with the gastric band partially removed from the inner rod; and

[0012] FIG. 5 is an enlarged partial view of the isometric view of FIG. 4 showing the distal end of the inner rod with the gastric band partially removed.

Detailed Description of the Invention

[0013] Referring now to the Figures wherein like numerals indicate the same elements throughout the views, there is shown in FIG. 1 an isometric view of an unactuated gastric band introduction device 10 ready for introduction into a patient. The gastric band introduction device 10 includes an elongated support tube 2 with a handle 7 at a proximal end. The gastric band introduction device 10 preferably includes a pair of opposed finger loops 3 extending outwardly from the handle 7. An inner rod 5 is slidingly located within the support tube 2 and has a thumb ring 4 at a proximal end and one or more upwardly protruding pins 6 for engaging a gastric band 20 at the distal end. The inner rod 5 may also include a shelf 11 located at the distal end of the support tube 2 for holding a gastric band 20. The inner rod 5 may also include a longitudinal protrusion 12 which may engage a longitudinal groove (not shown) in the support tube 2 for effecting the sliding engagement between the inner rod 5 and support tube 2 and also for stabilizing the inner rod 5 when it is inserted into the support tube 5.

[0014] The support tube 2 is preferably comprised of stainless steel but may be comprised of any durable engineering plastic. Preferably, the support tube 2 has a diameter of about 10mm to about 20mm and more preferably between about 12mm and about 15mm. Preferably, the support tube 2 is between about 30cm and about 50cm in length and more preferably about 43cm. However, it should be appreciated that the support tube 2 can be adapted in both length and diameter to

accommodate any kind of gastric band or to fit within any sized trocar. The handle 7, the finger loops 3, the inner rod 5, and the thumb ring 4 can be comprised of either stainless steel or any suitably durable engineering plastic. While pins 6 are shown in the illustrative embodiment, any other mechanism, such as a clip or a strap, which will releasably secure the gastric band to the inner rod while also allowing the gastric band to be easily removed from the inner rod will suffice.

[0015] FIGS. 2 through 5 show the gastric band introduction device 10 after the device has been actuated to deploy a gastric band 20 from the distal end of the support tube 5. In FIGS. 2 through 5, the inner rod 5 has been fully inserted into the support tube 2 and has pushed the gastric band 20 from the distal end of the support tube 5. Once the gastric band 20 has been deployed, the gastric band 20 can be removed from the inner rod 5.

[0016] In use, the gastric band introduction device, in an unactuated state, is inserted into a trocar placed in the patient's abdomen. The device is then actuated by sliding and inserting the inner rod fully into the support tube, thereby deploying the gastric band. The gastric band is then removed from the inner rod by the dissector to be placed around the stomach. Once the gastric band has been removed, the inner rod is pulled back out of the support tube, and the device removed from the trocar.

[0017] While the present invention has been illustrated by the description of several embodiments and while the illustrative embodiments have been described in considerable detail, it is not the intention of the applicant to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications may readily appear to those skilled in the art.

[0018]

It will become readily apparent to those skilled in the art that the above invention has equally applicability to other types of implantable bands. For example, bands are used for the treatment of fecal incontinence. One such band is described in U.S. Patent 6,461,292 which is hereby incorporated herein by reference. Bands can also be used to treat urinary incontinence. One such band is described in U.S. Patent Application 2003/0105385 which is hereby incorporated herein by reference. Bands can also be used to treat heartburn and/or acid reflux. One such band is described in U.S. Patent 6,470,892 which is hereby incorporated herein by reference. Bands can also be used to treat impotence. One such band is described in U.S. Patent Application 2003/0114729 which is hereby incorporated herein by reference.